



# Insulation +

## Community Insulation Initiative

Green Heating

Shoreham

# Welcome to the Insulation + Booklet

Thank you for picking up this booklet. In a time of global uncertainty, rising oil and electricity prices, inflation, as well as climatic change, insulating our homes and reducing our reliance on fossil fuels has never been more important.

Home insulation can often be low on our priority list in times when household budgets are being squeezed. While some measures are easy to implement, others require more disruption and a significant investment and sometimes the payback doesn't seem to make sense. However, the more steps you can take, the more comfortable your home will be both in cold and hot weather. In addition, your bills will be kept as low as possible and you will be reducing your carbon footprint.

What are the benefits of upgrading your insulation?

- To make your home more comfortable all year round
- To save money on your bills
- To lower your carbon footprint
- To enable new technologies such as Ground Source and Air Source Heat Pump Systems to replace your Oil or LPG Boiler

The Insulation + Initiative aims to encourage and support the Shoreham community in the challenges around improving home insulation and moving towards renewable energy. This is a wholly local initiative and we are very grateful for the contributions made by the Shoreham community to this booklet.

Conversations about insulation often start by people saying that, while they recognise the urgency, they aren't sure which improvements are the most cost effective and are hesitant about responding to cold callers.

A number of the measures outlined in this booklet can be done yourself, but for the more complex work it may be best to employ a contractor. The Insulation + team has been working to establish relationships with local, reliable contractors that can offer the services we need.

# How can Insulation + help?

As at the time of printing, we have been talking to two local contractors, **Brenwards** and **Aran**. Both are experienced in retrofitting a wide range of insulation improvements. They will carry out a free initial survey for Shoreham residents; provide a bespoke report/proposal/quotation; liaise about grants and provide guarantees where relevant.



**Brenwards** has built a strong reputation in Shoreham, as a major contractor for West Kent Housing Association (WKHA), installing a large number of insulation upgrades and Air Source Heat Pumps (ASHP). They use in-house labour and trusted, long-term contractors to offer all building, mechanical and electrical services. Based in Kent, they installed their first ASHP in 2018 and are accredited as a Microgeneration Certification Scheme (MCS) installer. If appropriate, they will inspect your electrical installation and design an ASHP system for heating and hot water. They can also access the Government Boiler Upgrade grant on your behalf.



**Aran** started as a loft and cavity wall insulation company and has worked across the East and South East of England for nearly 20 years. They are Trustmark Quality Programme members, working with a number of local authorities, including Sevenoaks District Council, enabling them to access grant funding for home improvements. Some are aimed at households on lower incomes (ECO flex) but a new grant fund (ECO Plus) is planned for April 2023 and likely to support work regardless of income (subject to certain criteria).

Some Shoreham residents indicated that they were very keen to get going as soon as possible on improvements. The Insulation + team has set up a small pilot scheme, liaising between these enthusiasts and the two companies. We shall continue to collect and share feedback on this pilot and look forward to a wider roll out.

If you would like to take advantage of this initiative, please email us at [greenheatingshoreham@gmail.com](mailto:greenheatingshoreham@gmail.com).

# How can you upgrade your home?



**Draught Stopping** Replacing or installing draft stopping to any leaky doors and windows can stop cold air coming in, and warm air going out.

£ DIY Potential



## Loft Insulation

Topping up loft insulation with off the shelf mineral wool will make a big difference to a cold loft space and can be done yourself.

£ DIY Potential



## Wall Insulation

Both internally and externally, wall insulation will improve the thermal performance of your house. Measures can include cavity wall insulation, insulated render or plasterboard.

££



### **Floor Insulation**

Insulation can be added to both suspended timber or solid concrete floors but can be quite disruptive. Worth considering if you are doing wider refurbishments.

££



### **Replacement Windows and Doors**

A bigger investment, but upgrading windows to double or secondary glazing and replacing old doors will make a huge difference to the thermal performance of your home.

£££



### **Air Source/Ground Source Heat Pump**

Replacing your Oil or LPG boiler with a heat pump is a greener way forward if your home is already well insulated. Expert advice should be sought to specify any installation as it may not be suitable for some properties. Government grants are available if you meet certain criteria.

£££

On the following pages you will find five case studies of houses of different types and ages across Shoreham. Contributors have shared what insulation they have already carried out and what they are planning to do to improve the energy efficiency of their homes.

# Case Study 1

## Semi detached house

(built in 1940s)

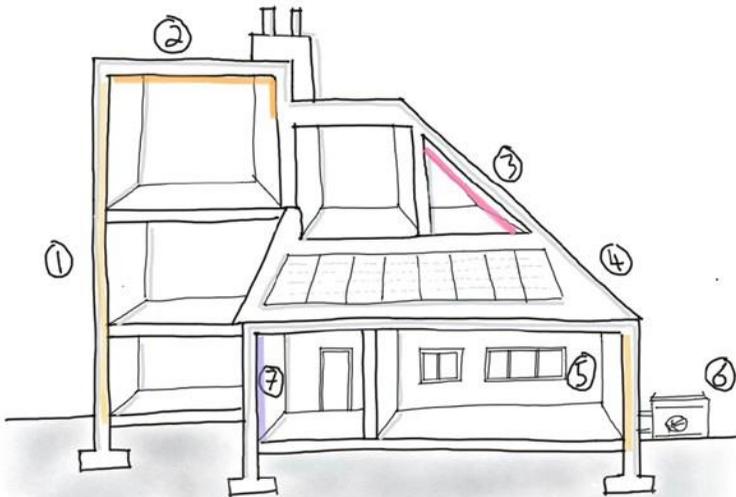
The house was built just after the war and was originally a farm-worker's cottage. Previous owners added a loft extension (unfortunately with a flat roof) before we moved in. About 13 years ago we extended our tiny kitchen to create a family room, added double-glazing throughout and solar panels on our roof. We now keep fit by running up and down stairs to switch things on when the sun is shining.

More recently, we've replaced an open fire and an old, leaking multifuel burner with two modern and eco-friendly wood burners that we can use when there's a power cut. Having an electric car has meant we are on a (renewable) electricity tariff which is cheaper 10pm – 3am so we charge the car then. It means that we can also use our immersion heater on a timer for all our hot water. We still want to reduce our carbon footprint further and move away from fossil fuels as part of a community effort. We hate having to use oil with a passion. We know that heat must still be leaking out from our house and it would be great to feel warmer in winter. Who knows, with better insulation we might even be able to shed some of the layers we have to wear during the cold months?

While there is cavity wall insulation that we put in about 15 years ago, we're not convinced that it is still doing its job. We know we need to think about more insulation in one flat part of the roof – but that will probably have to wait. For the time being and unless it is being used, we turn the radiator off and keep the door at the top of the stairs shut in the winter. Although structurally sound, the gaps left between the sloping sides of the roof and the walls of the loft room were as bad as we expected. A thin layer of very old and rather disgusting glass wool insulation, dead wisteria stems and lots of cobwebs.

Improving the insulation to the recommended 300mm depth involved crawling in tight spaces and clearing out all the mess. We put 100mm rockwool between the rafters, fitted 'loft legs' and then 200mm more insulation crosswise on top (available space for crawling getting smaller and smaller). The loft legs meant that we could still board the more accessible areas for storage.

We hope that the community insulation project will enable us to have a professional energy survey done with recommendations for effective solutions. We want to use reliable contractors rather than respond to pushy cold callers but it has been a struggle to find any grants that are still available. It makes complete sense for us to get rid of our oil boiler (and tank) and install an air source heat pump.



- ① ALL CAVITY WALLS FILLED WITH CAVITY WALL INSULATION
- ② FLAT ROOF INSULATION TO BE UPGRADED
- ③ ROOF RECENTLY REBUILT AND INSULATED
- ④ SOLAR PANELS INSTALLED
- ⑤ ALL WINDOWS DOUBLE GLAZED
- ⑥ AIR SOURCE HEAT PUMP TO BE INSTALLED
- ⑦ SOLID BRICK WALL TO BE INSULATED

## Case Study 2

### Detached Early 18th Century Cottage

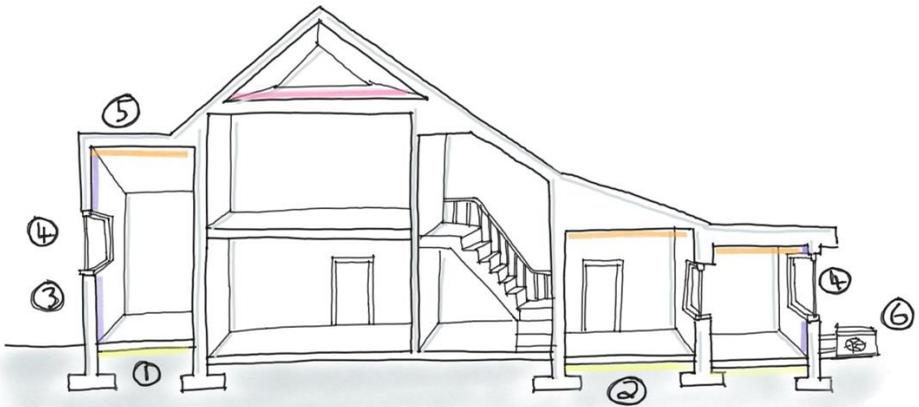
(built in 1700s)

We have a grade 2 listed house in the centre of Shoreham which faces insulation challenges typical of many older houses in the village. The front of the house dates from the early 18th Century whilst extensions at the side and back are from the 1800s, 1970s and 1990s. We have solid flint and brick walls in the old part of the house, cavity walls at the back and thin wooden walls in the Victorian extension. Most of the windows are single-glazed and many are in poor condition and hence very draughty. We do have some secondary glazing.

We face a challenge in making the house more energy efficient whilst respecting its heritage and preserving the features that drew us to it in the first place. Working with a good historic building consultant, Lisa Brooks, has been crucial. She has guided us on making sensitive improvements that conserve original features, retain breathability, and are within the bounds of what the planners are likely to allow.

We are still at an early stage but the main ideas we are pursuing are as follows:

- Renovating all the old windows and eliminating draughts
- Replacing secondary glazing and adding it where it is missing (there are several companies that make subtle bespoke secondary glazing for character properties)
- Insulating around doors
- Insulating under the suspended wooden floor
- Adding insulation to the inside of our living room walls
- Insulating our sloping roof and dormers. Replacing single glazed dormer windows with double glazing or adding secondary glazing.



- ① SUSPENDED TIMBER FLOOR INSULATED
- ② CONCRETE SLAB INSULATED + UNDERFLOOR HEATING ADDED
- ③ INSULATED PLASTERBOARD ADDED TO EXTERNAL WALLS
- ④ WINDOWS RESTORED + SECONDARY GLAZING ADDED
- ⑤ ROOF INSULATION UPGRADED
- ⑥ OIL BOILER SWAPPED FOR AIR SOURCE HEAT PUMP

## Case Study 3

### High Street Terraced Cottage

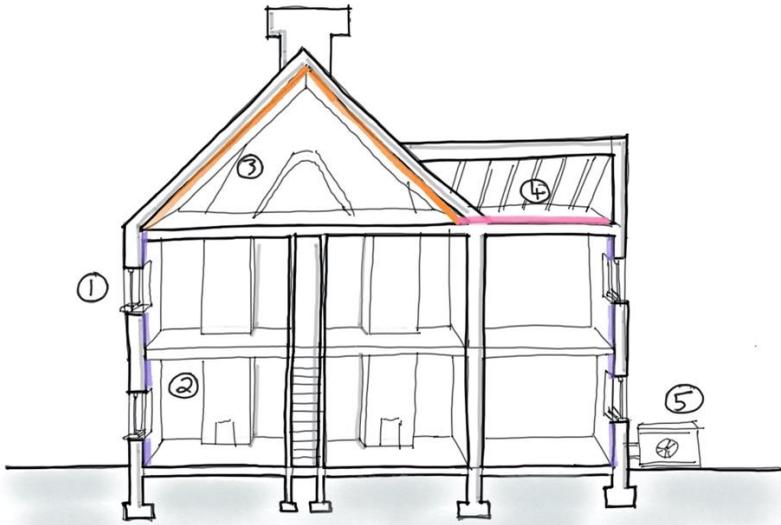
(built in 1890s)

The house is a brick built terraced cottage originally constructed in circa 1890's, with an extension built in the 1970's. The walls are solid brick and clad in Kent Peg tiles in some areas, with a tiled pitched roof. The roof space is split into two areas, a warm storage space and a smaller unused cold roof space.

Work already undertaken includes upgrading all windows and doors from single glazed to double glazed including new draught stoppers on the doors, thermal underlays were installed beneath the updated floor finishes and a modern log burning stove replaced an open fireplace. The unused cold loft space has been insulated with 100mm mineral wool insulation between joists and 200mm over the top of the joists.

Planned work will include the addition of a thin high performance insulated plasterboard to the inside of all external solid brick walls, giving a much needed improvement in thermal performance. The storage loft will be reinsulated with rigid board insulation between and under rafters to meet current Building Regulations requirements.

The house is currently run on oil with a wet heating system and an aging boiler so will be switched to an air source or ground source heat pump when the insulation work is completed.



- ① ALL DOORS + WINDOWS UPGRADED TO DOUBLE GLAZING
- ② INSULATED PLASTERBOARD TO EXTERNAL SOLID BRICK WALLS
- ③ RIGID BOARD INSULATION BETWEEN AND UNDER RAFTERS TO WARM LOFT
- ④ 300MM MINERAL WOOL INSULATION TO COLD LOFT
- ⑤ SWITCH FROM OIL BOILER TO GROUND OR AIR SOURCE HEAT PUMP

## Case Study 4

### Detached house, Church Street

(built in 1850)

This was originally the gardener's cottage for the Shoreham House estate. It was originally four up four down with a lean-to to the side, made of solid walls of brick, with suspended wooden floors downstairs. A single room extension was added on the back of the house in the 1950s together with a small flat-roofed boot room. There are several fireplaces in the property - two downstairs (one used) and two in the bedrooms upstairs. The property is raised a metre above the garden - presumably the builders were aware of the potential for flooding - with air bricks keeping air circulating under the floors. All very good for keeping the wood and chimneys dry, but cold air creeps into the property, particularly under the wooden floors.

About 10 years ago we added thick insulation to the sloping roof area and to the internal walls of the lean-to section of the house. We added an area of floor and thick layers of insulation in the loft but are still concerned about some areas, particularly the points where the roof meets the walls. Having the loft sprayed with insulation would have been costly and we were told that the foam might trap moisture causing rot. To prevent draughts coming down the chimneys, we put in a felt barrier. We imagine a better fireplace insert, with an area which can be closed, would help. Or sealing it and having a small wood burning stove.

The new windows which we added to the rear of the property are all double-glazed and this year we added secondary glazing to a couple more. The Velux windows on the sloping roof are double-glazed. However, quotes to add heritage double-glazing wooden windows to the front of the property are more than our budget allows for the moment, though of course there would be savings in terms of heating bills.

Heating the house has been a challenge. We investigated having a heat pump, but the initial outlay was too high and we were told old houses are not the best for these systems. So we kept the existing wet heating system and added new pipes and some new radiators (including tall three-deep radiators).

We replaced the oil-based heating system with two relatively cheap-to-buy electric boilers - effectively large kettles. However, the bills for heating with our two electric boilers (which use a lot of energy, albeit from a renewable supply) are now very high. We are also charging our hybrid car using the main power supply. And our hot water is also heated by the boilers, and stored in a highly insulated hot water tank. We investigated having solar panels on the house but were told the roof area was too small, uneven and the tiles too brittle.

Solutions may still include:

- Insulation under the suspended floors,
- Carpeting in certain areas, wood-burning stoves to help lower costs of heating with electric boilers,
- More insulation in the loft,
- Insulation inside the remaining rooms,
- External insulation on the thinner walls.

Access to group schemes for insulation, for the roof, for the floors and especially for the house walls would be great.

## Case Study 5

### Terraced Cottage, Crown Road

(built in 1839)

We live in a 3 bedroomed terraced brick house – although we're not sure whether it is solid brick or there is a cavity. We are joined on our top floor to our next door neighbours' house and have an alleyway running between us on the ground floor.

Currently we use LPG for our heating and hot water but this is expensive and we would much prefer to move away from fossil fuels and the inconvenience of replacing canisters. Having a heat pump sounds like a good idea.

Over the last year we have undertaken significant improvements including complete redecoration, reflooring and new double-glazed windows throughout. So, our budget for any further improvements is limited, especially given the current financial situation.

Before we moved in, the loft was converted into a bedroom and bathroom. The eaves have mainly been boxed in to create storage cupboards, which are cold. This means I have no way of knowing what insulation there is. In the one area I can see, around the boiler, there is some insulation laid on the rafters.

We are hoping that the community insulation project will help us to find out what improvements might be possible in order to retain heat both for our own comfort and budget.

## Useful advice

**Energy Saving Trust** <https://energysavingtrust.org.uk/>

**Which Guides** [www.which.co.uk/reviews/insulation/article/guides](http://www.which.co.uk/reviews/insulation/article/guides)

**Historic England** <https://historicengland.org.uk/advice/your-home/saving-energy/>

The 'Old House Eco Handbook' by Suhr and Hunt has very helpful practical advice on improving insulation in older properties.

Carol Stewart at Sevenoaks District Council is the Energy Efficiency Project Officer. She can be contacted at [carol.stewart@sevenoaks.gov.uk](mailto:carol.stewart@sevenoaks.gov.uk). There are details of energy efficiency and grants on the Council website. The Council can also loan a thermal imaging camera (free), to help you to identify energy losses. Contact [PSH@sevenoaks.gov.uk](mailto:PSH@sevenoaks.gov.uk)

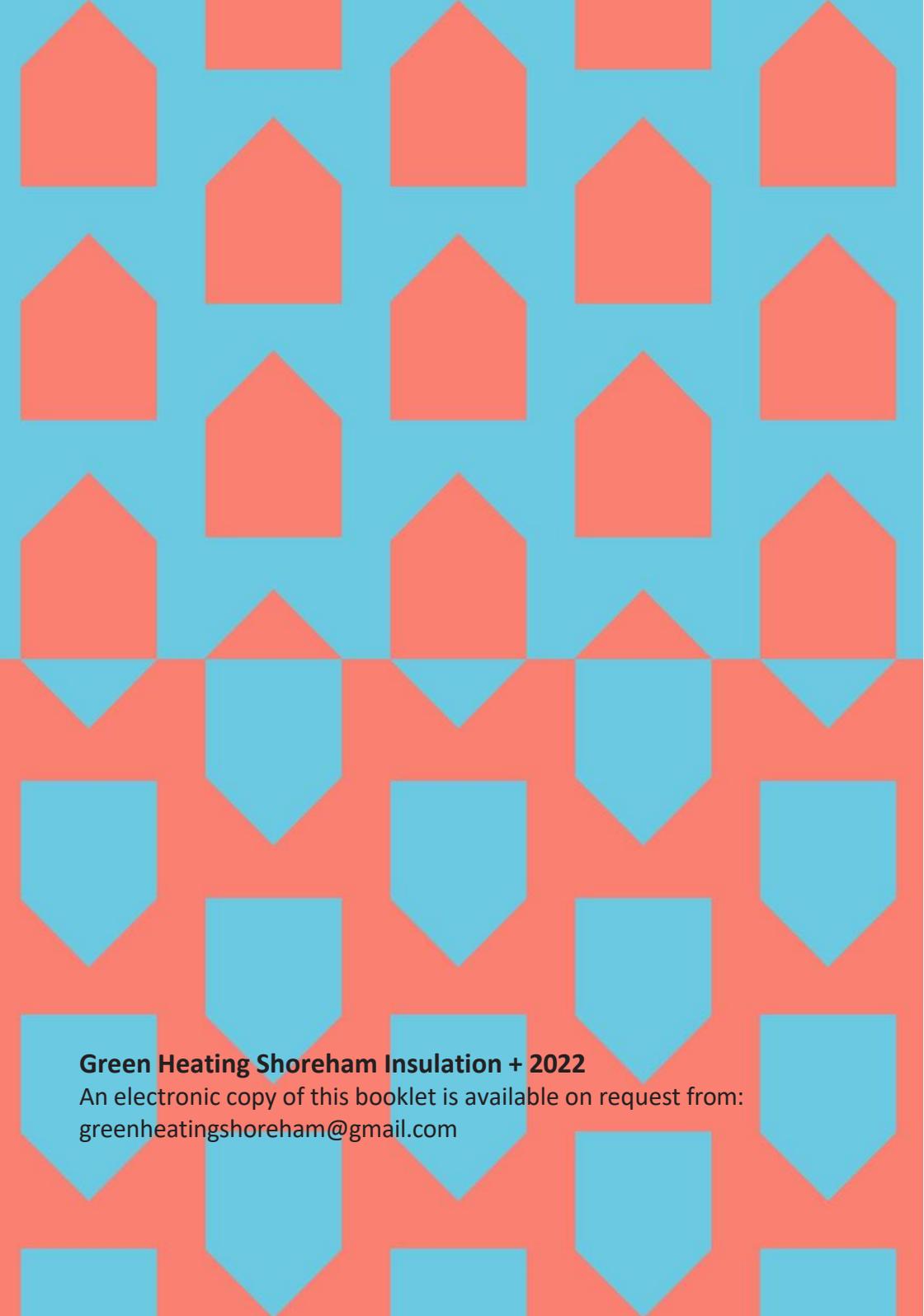
## Grants

**Sustainable Warmth** – for homeowners with incomes below £30,000 (or £20,000 after housing costs), a non-repayable grant worth up to £10,000 to improve energy efficiency for home insulation and new heating systems. [https://www.sevenoaks.gov.uk/info/20069150/help\\_with\\_the\\_cost\\_of\\_living/653/reduce\\_your\\_energy\\_use](https://www.sevenoaks.gov.uk/info/20069150/help_with_the_cost_of_living/653/reduce_your_energy_use) <https://surveys.est.org.uk/s/SustainableWarmth>

**Energy Company Obligation (ECO 4)** – funding is available for cavity wall and loft insulation for all eligible properties, whether owner occupied or private rented, irrespective of income, but subject to survey. There are also limited grants available for room in roof insulation, solid wall insulation, broken boilers, inefficient boilers and new central heating. <https://www.arangroup.co.uk/pages/160/ECO-Grant-Funding/>

## Boiler Upgrade scheme

A £5000 grant is available for an ASHP scheme (£6000 for ground source), subject to certain criteria eg that the property's EPC has no recommendations for loft or cavity wall insulation. This grant is accessed through the installer. <https://www.gov.uk/guidance/check-if-you-may-be-eligible-for-the-boiler-upgrade-scheme-from-april-2022>



**Green Heating Shoreham Insulation + 2022**

An electronic copy of this booklet is available on request from:  
[greenheatingshoreham@gmail.com](mailto:greenheatingshoreham@gmail.com)